WHAT IS CLAIMED IS:

1.   A device for measuring the pressure of a tire, the device comprising:

(a)   a microcontroller configured to calculate a target pressure;

(b)   a pressure sensor coupled to the microcontroller for measuring an internal pressure of the tire;

(c)   a first temperature sensor coupled to the microcontroller for measuring an internal temperature of the tire;

(d)   a user input coupled to the microcontroller for inputting a recommended pressure for the tire;

(e)   a second temperature sensor coupled to the microcontroller for measuring an ambient temperature; and,

(f)   a display coupled to the microcontroller for indicating:

(i)   the internal pressure of the tire; and,

(ii)   the target pressure,

wherein the microcontroller converts the recommended pressure into the target pressure based on a ratio of the internal temperature in Kelvin to the ambient temperature in Kelvin, such that a user is able to inflate and deflate the tire until the display indicates that the internal pressure is equal to the target pressure.

2.   A device according to claim 1 further comprising a valve configured to be coupled to a stem of the tire, the valve connected to be controlled by the microcontroller for regulating the inflation and deflation of the tire based on a difference between the internal pressure and the target pressure.

3.   A device according to claim 2 further comprising a locking lever configured to releasably secure the valve onto the stem of the tire.

4.   A device according to claim 1 wherein the display also indicates the recommended pressure input from the user input.

5.   A method of inflating a tire comprising:

(a)   providing a device comprising a pressure sensor, first and second temperature sensors, a user input and a display, all coupled to a microprocessor;

(b)   coupling the device to the tire;

(c)   measuring an internal pressure P and an internal temperature T of air in the tire with the pressure sensor and the first temperature sensor, and measuring an ambient air temperature Ta with the second temperature sensor;

(d)   inputting a recommended pressure Pr with the user input;

(e)   calculating a target pressure $Pt = Pr + P(1-Ta/T)$;

(f)   displaying the internal pressure P and the target pressure Pt on the display; and,

(g)   adjusting an amount of air in the tire so that the internal pressure P is equal to the target pressure Pt.

6.   A method according to claim 5 wherein the device further comprises a valve coupled to the microcontroller, and wherein coupling the device to the tire comprises connecting a first end of the valve to a stem of the tire.

7.   A method according to claim 6 wherein adjusting the amount of air in the tire comprises allowing air to flow from the first end of the valve to a second end of the valve when the internal pressure P is greater than the target pressure Pt.

8.   A method according to claim 6 further comprising connecting the second end of the valve to a compressed air source and wherein

adjusting the amount of air in the tire comprises allowing air to flow from the second end of the valve to the first end of the valve when the internal pressure P is less than the target pressure Pt.